

# UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA



## LESSON PLAN

**PREPARED BY- B.K. GANTAYAT**  
**SUBJECT- ENVIRONMENTAL STUDIES**

### **DEPARTMENT OF CHEMICAL ENGINEERING**

	<b>Topics covered</b>
WEEK 1	Definition, scope of environmental studies
	Multidisciplinary nature of environmental studies
	Need for public awareness for environment
	Important question discussion and revision
WEEK 2	Natural resources and associated problems
	Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams
	Use and over-utilization of surface and ground water, floods, drought, conflicts over water
	Use and exploitation, environmental effects of extracting and using mineral resources
WEEK 3	World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers- pesticides problems, water logging, salinity.
	Growing energy need, renewable and non-renewable energy, use of alternate energy sources.
	Land as a resource, land degradation, man induces landslides, soil erosion, and desertification
	Role of individual in conservation of natural resources
WEEK 4	Equitable use of resources for sustainable life styles
	Important question discussion and revision
	Concept, Structure and function of an eco-system.
	Difference between Producers, consumers, decomposers
WEEK 5	Energy flow in the eco systems
	Ecological succession
	Food chains, food webs and ecological pyramids
	Introduction, types, characteristic features, structure and function of eco system
WEEK 6	Forest ecosystem
	Aquatic eco-systems (ponds, lakes, rivers, oceans, estuaries).
WEEK 7	Introduction-Definition: genetics, species and ecosystem diversity

	Biogeographically classification of India
	Value of biodiversity: consumptive use, productive use
WEEK 8	Value of biodiversity: social ethical, aesthetic and optin values.
	Biodiversity at global, national and local level
	Threats to biodiversity: Habitats loss
	Poaching of wild life, man wildlife conflicts
WEEK 9	Important question discussion and revision
	Definition Causes of Environmental Pollution
	Air pollution, Causes, effects and control measures
	Water pollution, Causes, effects and control measures
WEEK 10	Soil pollution, Causes, effects and control measures
	Marine pollution, Causes, effects and control measures
	Noise pollution, Causes, effects and control measures
WEEK 11	Thermal pollution, Causes, effects and control measures
	Nuclear hazards, Causes, effects and control measures
	Waste Management: Causes, effects and control measures of urban and industrial wastes
	Role of an individual in prevention of pollution.
WEEK 12	Floods, earth quake, cyclone and landslides management
	Important question discussion and revision
	Form unsustainable to sustainable development
	Urban problems related to energy
WEEK 13	Water conservation, rain water harvesting, water shed management
	Resettlement and rehabilitation of people; its problems and concern
	Environmental ethics: issue and possible solutions.
WEEK 14	Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
	Air (prevention and control of pollution) Act
	Water (prevention and control of pollution) Act
	Public awareness
WEEK 15	Important question discussion and revision
	Population growth and variation among nations.
	Population explosion- family welfare program
	Environment and human health.
	Human rights.
WEEK 16	Value education
	Role of information technology in environment and human health
	Revision
	Doubt clearing and quiz



### BOOKS FOR REFERENCE:

#### TEXT BOOKS

Environmental Engineering by V.M.Domkundwar, Dhanpat Rai & Co Publication

Fundamental concepts in Environmental Studies by D.D.Mishra, S.Chand& Co-Ltd

Text book of Environmental Studies by K.RaghavanNambiar, SCITECH Publication Pvt. Ltd.

	<b>Prepared by</b>	<b>Approved by</b>
<b>Signature</b>		
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<b>SESSION</b>	<b>2021-22</b>	